

of Acanthaceae in the state. Range extension of 220 km nw. of the nearest Mexican locality (Baja California, 9.5 km s. of La Ventana, *Daniel 1545*, ASU, CAS) and 230 km w. of the nearest known locality in the United States (Arizona, Yuma Co.: Kofa Mountains, various collectons cited in Daniel, *Fl. Neotrop.* 34:1–116, 1983). The California population marks the western limit of the distribution of both species and genus. Of the numerous forms discussed by Daniel (*ibid.* and *Desert Pl.* 5:162–179, 1984) in this morphologically diverse species, *Bourell 3509* most closely resembles plants originally described as *C. californica* var. *pallida* I. M. Johnst. from Baja California, indicating a link with plants from that region rather than with those from Arizona.—MONA BOURELL and THOMAS F. DANIEL, Department of Botany, California Academy of Sciences, Golden Gate Park, San Francisco 94118.

#### BAJA CALIFORNIA SUR

*QUERCUS OBLONGIFOLIA* Torr. (FAGACEAE).—Mpio. de La Paz, Sierra de la Victoria, oak woodland community, road to San Antonio de la Sierra Ranch, 6 km se. of El Triunfo, 900 m, 23°43'N, 110°03'W; small population; *José L. León 1132* (CIB). Additional trees have been seen in exposed sites at middle elevations in the Sierra de la Laguna, where they are called “encino laurel”. (Det. by comparison with specimens at CAS.)

*Significance.* A range extension of 420 km se. from the Sierra de la Giganta where it was reported by Carter (1955; “Observaciones sobre los encinos de Baja California”, *Bol. Soc. Bot. Mex.* 18:39–42).

*QUERCUS ARIZONICA* Sargent (FAGACEAE).—Mpio. de La Paz, Sierra de la Laguna, oak-pine woodland community, 2 km n. of La Laguna meadow, 1790 m, 23°36'N, 109°58'W, *José L. León 1887, 2331* (CIB). A unique population of about 50 trees. Acorn production is uncertain in this area. (Det. by D. E. Breedlove.)

*Significance.* Known previously in mountains of Arizona, and in the Sierra Madre Occidental of Sonora and Chihuahua. Near the collection site is a deep brook where *Quercus reticulata* H. & B. grows; the main distribution of this species is also in the Sierra Madre Occidental.—JOSÉ LUIS LEÓN DE LA LUZ, Centro de Investigaciones Biológicas de Baja California Sur, Apdo. postal 128, La Paz, Baja California Sur, México.

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## REVIEW

*Conservation and Management of Rare and Endangered Plants.* Edited by THOMAS S. ELIAS. 630 pp. California Native Plant Society. Sacramento, CA. 1987. ISBN 0-943460-11-5 (cloth), \$45.00, ISBN 0-943460-12-3 (paper), \$24.95.

This significant volume is the proceedings of a well-attended conference on rare and endangered plants held under the auspices of the California Native Plant Society in November of 1986. The objective of the conference was to bring together persons interested in the biology, management, and preservation of rare plants for exchange of ideas and information. The editors also sought early publication of the proceedings, a goal which they achieved in good style. The resulting volume includes 92 papers by 106 authors. Both the picture and typography on the cover are very attractive—suitable for display on the coffee table. The back cover, somewhat less striking, provides a picture key for the identification of the editor and conference coordinator (J. R. Nelson).

Twenty papers addressed the social, legal, and institutional aspects of rare plant protection and management. Though not the most riveting part of the volume, they provide a valuable summary of the current laws and programs relevant to rare plant conservation. The articles by Bartel and Cochrane will probably be especially useful as references. About 15 papers deal with research needs and general methodology. Among the topics addressed are reserve design, methods for sampling rare plants, the role of artificial propagation, and computerized systems for storing and analyzing data on rare plant habitat. The remaining papers are mostly case studies, though many also attempt to generalize. Genetic and evolutionary questions are addressed in a number of papers (e.g., Ledig, Conkle, Palmer), but the primary emphasis is on population and community ecology. The work reported ranges from sophisticated long-term studies (e.g., Kruckeberg on serpentine, Palmer's study of *Holocarpha*) to brief reports on obviously still-incomplete work in progress. The papers mostly deal with California though Arizona work is reported in three papers and other studies describe situations in Oregon, New Mexico, Alberta, Minnesota, and South Africa.

Though the editor and conference organizers are to be commended for getting the volume out promptly, this no doubt contributed to the major problem with the book—the uneven quality of the contributions. A few papers have major typographical and stylistic blunders that more leisurely editing might have caught. Peer review would also have shortened and improved the papers, and justified the exclusion of some. Summary papers prepared after the conference that integrated the contributions and guided the reader through them would also have been valuable.

A curious sidelight, of uncertain significance, is the greater than random frequency of occurrence of some authors. One author appears on five papers (only four of which are listed in the General Index), two are involved in three papers, and nine others appear on two papers. Is this evidence that rare plant biologists, like some rare plants, are highly aggregated and have a tendency to inbreeding?

The heterogeneity of the contributions makes it difficult to summarize the major conclusions. It is apparent, as Messick and others point out, that we need more status data on population sizes, locations, and degree of protection and threat. We also need more information on the population ecology and life histories of rare plants, especially as these are affected by events of low frequency like fire and severe drought. The papers, as is appropriate for rare taxa, stress minimally intrusive observational methods. But experimental studies, where possible, are also necessary and should be supported by those agencies with the resources to do so.

The heterogeneity is also probably an accurate reflection of the diversity of persons and approaches that deal with rare plant problems. Research on rare plants is relatively new, geographically dispersed, and in large part low-tech and labor intensive. These circumstances favor decentralization and a release of variability. No doubt there will be evolution in the direction of greater uniformity as the most useful research methods and management techniques come to be recognized. This volume, by putting a large sample of the current activity before us, should speed the selection process. It provides a good review of the state of our knowledge about endangered plants. There is no doubt that these proceedings will have an influence on the direction that rare plant research will take in the future. It is a book anyone with an interest in rare plants, especially in California, will want to have.—PAUL H. ZEDLER, Department of Biology, San Diego State University, San Diego, CA 92182-0057.